

ABSTRACT

A method for synthesizing noise in a digital image comprises the steps of (a) estimating noise statistics based on a set of spatial autocorrelation coefficients and a set of spectral correlation coefficients that correspond to the color channels of the image, where at least one of the spatial autocorrelation coefficients is weighted by at least one of the spectral correlation coefficients, thereby providing a weighted set of autocorrelation coefficients, and where a set of filter coefficients is obtained from the weighted set of autocorrelation coefficients; and (b) synthesizing a synthetic texture by using the filter coefficients to filter a random noise field in each of the color channels, thereby producing output noise fields in each of the color channels that replicate a synthetic texture, e.g., a desired grain appearance, when combined into the digital image.